

REMARKS

This paper responds to the Office Action mailed on September 25, 2006.

Claims 1-46 are pending in the application. Claims 1, 4, 7, 11, 14, 17, 33, 37, 41, 43, and 46 have been amended. Claims 1-46 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,871,071 to Takao et al. (“Takao”) in view of U.S. Patent No. 6,522,628 to Patel et al. (“Patel”). The Applicant respectfully traverses and requests reconsideration.

Independent claims 1 and 4 each recite “controlling transmission power of a common control signal, which governs a scope of a service area that a radio base station forms, for interference suppression in response to said occurrence of interference between service areas provided by plural radio base stations.” Independent claim 7 recites “controllably changing transmission power of a common control signal, which governs a scope of service area that a radio base station forms, to suppress interference between service areas detected based on said measurement result in said radio resource management apparatus.” Independent claims 11 and 14 each recite “detecting the occurrence of interference between service areas provided by plural radio base stations; and controlling transmission power of a common control signal, which governs a scope of service area that a radio base station forms, to suppress the interference . . .”.

Independent claim 37 recites “responding to occurrence of interference between service areas provided by plural radio base stations and then controlling the transmission power of a common control signal, which governs a scope of a service area that a radio base station forms, to suppress the interference.” Independent claims 41 and 42 recite “responding to occurrence of interference between plural service areas and controlling [a change of] transmission power of a common control signal, which governs a scope of service area that a radio base station forms, to suppress interference. . . .” Neither

Takao nor Patel alone or in combination teach controlling transmission power of a radio base station for interference suppression in response to said occurrence of interference between service areas provided by plural radio base stations.

The claimed invention is for suppressing the interference by controlling transmission power of a radio base station so that the interference that occurs between service areas of radio base stations is detected and the transmission power of the radio base station that causes the interference to occur in the communication system radio such as a wireless LAN is reduced.

In general, the service area that the radio base station forms depends upon the transmission power of the common control signal that the radio base station transmits to all radio terminals, each of which is a subordinate. For example, this common control signal is referred to as a beacon signal in case of the wireless LAN, and as a common pilot channel in case of the cellular-type mobile telephone. The claimed invention allows the interference between the service areas to be reduced by controlling the transmission power of this common control signal to change the scope of the service area.

In other words, this claimed invention allows the scope of the service area to be automatically adjusted/changed by controlling the transmission power of the radio base station for the purpose of suppressing the interference.

None of the inventions of the cited references, which at best show only the control of transmission power for individual radio terminals, teach, suggest, or allow that the scope of the service area be changed.

Specifically, the Office Action alleges that Takao discloses detecting the occurrence of interference between service areas provided by plural radio base stations at column 3, line 44 to column 4, line 16 and at column 8, line 33. However, Takao discloses a handover control method where a communicating counterpart of a mobile station that communicates with a base station is switched to another radio base station when a communication securing the predetermined minimum bandwidth becomes impossible. Takao is teaching handover control methods that operate as a function of the inability to communicate with a predetermined minimum bandwidth secured of any mobile stations that are in communication with the radio base station. Takao neither teaches nor suggests detecting the occurrence of interference between service areas provided by plural radio base stations.

At page 2, the Office Action states that Takao discloses “controlling transmission power of a radio base station for interference suppression in response to said occurrence of interference between service areas provided by plural radio base stations,” and yet the Office Action also admits that Takao does not disclose “controlling transmission power of a radio base station for interference suppression in response to said occurrence of interference between service areas provided by plural radio base stations.” The Applicant believes that the Office Action intended to state that Takao did include this disclosure. Applicant urges that Takao indeed does not have a teaching or suggestion for controlling transmission power of a radio base station, Takao being directed towards handover techniques based on electric field intensity information of a base station and minimum bandwidth of a user request.

Nor does Patel contain a teaching or suggestion for controllably reducing transmission power of a radio base station. Patel is directed towards allocating

transmission resources based on the time and power parameters of a packet, where the parameters of the packet are used to determine its impact on transmission resources. However, the Patel reference teaches conforming the packet transmission to the physical layer resource in a wireless network. Thus, for example, a token can represent the time and power parameter of a packet, and this could be used, for example, to determine how much bandwidth should be allocated for the packet. Allocating bandwidth is not the same as controlling transmission power. In short, Patel simply teaches techniques for measuring the network impact of a packet and allocating accordingly. It has nothing to do with controlling transmission power of the transmitting device, much less controlling transmission power of a base station for interference suppression in response to said occurrence between service areas provided by plural radio base stations.

Similarly, independent claims 11, 14, 37, 41, and 42 all contain limitations directed towards controlling transmission power to suppress interference. Independent claims 23 and 26 recite: "controlling transmission power of a radio base station based on said information of radio link qualities from plural radio stations." As explained above, neither Patel nor Takao, alone or in combination, teach controllably changing transmission power of a radio base station based on any information, including radio link qualities. Accordingly, nothing in Takao or Patel, alone or in combination, teach all the limitations of these independent claims nor any claims ultimately depending therefrom.

Independent claims 29, 31, 39, 40, and 44 recite: "controllably changing a frequency used by a radio base station based on information on radio link qualities notified from plural radio terminals." Patel has no teaching or suggestion for

controllably changing a frequency used by a radio base station, a limitation which is not addressed in the Office Action. Allocating transmission resources to a packet based on its impact on a network is not the same as controllably changing the power or frequency of a radio base station.

Independent claims 17, 33, 43, and 46 each recite that the distributively controlling a load is based on “radio link information including radio interference information.” Attention is drawn to paragraph 65 of the present application as well as Figures 4 and 15 for an exemplary description of radio link measurement information which shows that radio link quality information includes information on radio interference with a neighboring base station. As explained at paragraph 65, radio interference information is included in radio link quality information. See also paragraph 91. Takao, which the Office Action cites as teaching or suggestion radio link quality information, does not teach the above recited limitation. At best, it shows electric field intensity information on a radio base station obtained from a mobile station. Nor does anything in Patel cure the deficiency of the Takao reference as applied to the limitation above.

Accordingly, neither Takao nor Patel, alone or in combination, teach all of the recitations of each of the independent claims 1, 4, 7, 11, 14, 17, 23, 26, 29, 37, 39-43, 44, and 46 of the present application. As all of the claims of the present application ultimately depend from these independent claims, and nothing in Takao or Patel cure the deficiency of these references as applied to the independent claims, Applicant urges that claims 1-46 are presently in condition for allowance, and further urges reconsideration and withdrawal of all of the rejections.

Application No. 10/737,118
Amendment dated January 23, 2007
Reply to Office Action of September 25, 2006

Docket No.: U2054.0147

In view of the above amendment, Applicant believes the pending application is in condition for allowance.

No fee is believed to be due for this Amendment. Should any fees be required, please charge such fees to Deposit Account No. 50-2215.

Dated: January 23, 2007

Respectfully submitted,

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